Did you know?

- Find a bug? Need a new feature?
  - Send feedback
    - Nearly all applications have a “Send Feedback” form in the Help menu
    - Automatically creates an Action Please request
    - Best method for both long- and short-term requests for the Controls group
    - Send it while you’re thinking about it!

Introduction to RHIC Operations

Part V: RHIC at Store

Objectives

- Following this presentation, operators should:
  - Have a basic understanding of the systems involved in establishing a RHIC store.
  - Be familiar with the managers and applications used at store.
  - Be able to recognize and troubleshoot some common problems at store.
  - Understand Operations' responsibilities with regards to the experimenters.
- This presentation does not cover store start-up/setup, but should introduce the tools needed to follow other setup documents to that end.

Maximizing luminosity, revisited

- Goal: 60% calendar time at store.
  - "Time at store" means lumi-on to lumi-off.
  - ~ 100 hours/week or ~14.5 hours/day.
  - Breakdown of the 9.5 hours downtime:
    - -1.7 hrs from weekly APEx
    - -0.9 hrs from biweekly maintenance
    - -1.5 hrs ramp time from 3 ramps (a bit pessimistic)
    - -2.4 hrs fill time from 3 ramps (a bit optimistic)
    - 3 hours/day remain for failure, setup, development…

The MCR-Experimenter dynamic

- Experimenters:
  - The accelerator complex is a black box that occasionally spits out collision data that we can record.
- MCR:
  - The experiments are black boxes that occasionally claim to make use of some part of the stores we provide them.
- ***Timely, proper communication is paramount***
  - No information is bad.
  - Wrong information is worse.
  - “I don’t know” is an acceptable response, as long as information is made available when the situation is understood.

Communication tools

- BERT
  - CATV (and Web) messages
    - Overall status, brief situational details.
  - Ring states from ringSpec, other stats
    - Written by tape, RhicInjection, etc.
  - Experiment/MCR feedback
    - Background severity, steering, collimation status, experimental magnet status
    - Scheduling end of store
- Telephone calls
  - Sometimes, person-to-person communication is a necessity.
  - Should be minimized at critical times
  - Phone calls exemplifying failed communications:
    - “When are you going to ramp?”
    - “How are your backgrounds?”
    - “Are you done steering?”
    - “Are you done collimating?”

Beginning of store

- End ramp
  - Tape tells you this
- Adjust orbit (and cool?)
  - Automatic scheme under development
- Collide
  - Tape sequence
- Rebucket
  - Tape sequence
- Optimize steering
  - Only if necessary; can also be automatic
  - Doesn’t depend on rebucketing
- Collimate (and cool?).

Application Demo

- Tools to use (in addition to communications)
  - tape
  - RhicOrbitDisplay
  - lisa
  - RhicLumi
  - Collimator
  - Gpm
    - RHIC/BeamDecay
    - RHIC/Experiments/* (various rate, background information)

End of store

- Schedule dump time
  - Fixed store length determined by MCR, curtailed or extended by experimenter consensus.
- Prepare to dump
  - Don’t end the store unless you can refill…
- End of store activities
  - Measurements, Machine Development, etc.
  - Setup for next ramp as much as possible during down ramp

For more information...

- RMS web page
  - See RHIC Setup documents for collimation, etc.
- OpsWiki
  - RHIC cycle checklist